Connecting farmer mental health with cow health and welfare on dairy farms using robotic milking systems

MTM King*, RD Matson and TJ DeVries*

Department of Animal Biosciences, University of Guelph, Guelph, Ontario N1G 2W1, Canada
* Contact for correspondence: meagantmking@gmail.com/tdevries@uoguelph.ca

Abstract

The objective of this exploratory, preliminary study was to survey dairy farmers using robotic milking systems to better understand their mental health and potential connections to their cow health and welfare. Only farms using robotic milking systems in Ontario, Canada were visited for collection of data on management practices, cow welfare, and milk production and quality. Those farmers also completed an online survey that included validated psychometric scales used to assess resilience, stress, anxiety, and depression; results from 28 farms were analysed. Thirty cows per farm (or 30% for herds > 100 milking cows) were scored for body condition (five-point scale: 1 = thin to 5 = over-conditioned) and lameness (five-point scale: 1 = sound to 5 = lame); cows with a Body Condition Score ≤ 2.5 and lameness score ≥ 4 were defined as under-conditioned and severely lame, respectively. Farmer stress was positively associated with severe lameness prevalence, was greater for females vs males, and was greater for those feeding manually vs using an automated feeder. Anxiety and depression were greater for females vs males, and for those working alone, feeding manually, and with lesser milk protein percentage. Anxiety was also positively associated with the prevalence of severe lameness. Resilience was greater for those with automated feeding systems, but tended to be negatively associated with milk yield per robot and positively associated with milk somatic cell count. This is the first study to identify associations between farmer well-being and cow lameness, udder health, and milk yield. With future research, we can better understand this relationship to improve the well-being of both agricultural animals and their caretakers.

Keywords: *animal welfare, automation, dairy cow welfare, lameness, mental health, One Welfare*